

AMENDMENTS TO THE CLAIMS:

The following listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claims 1-22 (cancelled).

Claim 23 (new): A method of packaging leaky fuel rods for at least one of transport and subsequent storage of at least 50 years, each leaky fuel rod containing pellets of fuel material in tubular cladding and being closed at ends of the tubular cladding and presenting a sealing defect, each leaky fuel rod coming from at least one fuel assembly and being deposited in a first step underwater in a pool, the method comprising:

making available a plurality of capsules, each of the plurality of capsules for receiving one of the leaky fuel rods, and each of the plurality of capsules including a tubular sheath and two end plugs, at least one of the two end plugs being removable, each of the plurality of capsules having a longitudinal axis;

placing a loading structure in the pool, the loading structure being capable of receiving the plurality of capsules so that the longitudinal axes of the plurality of capsules are in a vertical orientation, the loading structure having an open top end;

securing, on the open top end, a device for loading one of the leaky fuel rods into the at least one capsule, the device for loading having an opening and a guide device capable of being placed at the opening;

inserting the leaky fuel rods in the pool one by one into empty ones of the plurality of capsules in the loading structure at at least one loading location, the inserting for each leaky fuel rod including: unscrewing one of the end plugs of a respective capsule of the plurality of capsules, the end plug being situated at a capsule top end; placing the leaky fuel rod into the respective capsule via the guide device; and screwing the one end plug at the top end of the capsule back into place; and

placing each capsule containing the leaky fuel rod in a location of a support structure different from the at least one loading location; and

transporting and storing the support structure containing the leaky fuel rods inside the capsules.

Claim 24 (new): The method according to claim 23, wherein the loading structure comprises a handling top nozzle and a bottom nozzle both extending transversely, the nozzles being assembled to each other by longitudinally-extending tie-bars, together with a plurality of transversely-extending spacer plates distributed in the longitudinal direction of the loading structure and each comprising an array of openings, each serving to pass and hold a respective capsule, some having engaged therein the tie-bars, the loading structure including a first location for loading capsules in a vicinity of a corner of a square-shaped cross-section of the loading structure.

Claim 25 (new): The method according to claim 24, wherein the loading structure further comprises a second location in which the bottom nozzle of the loading structure includes an opening for receiving a closure plug at the bottom end of the respective capsule, the location having placed therein a peg projecting into the loading structure, wherein the bottom plugs and the top plugs of the capsules are pierced axially by respective channels having respective channel-closure valves located therein and urged towards a closed position by respective helical springs, an open end of the channel in the top plug including an arrangement for connection to a duct for feeding inert gas, and wherein after a leaky fuel rod has been inserted in a capsule and the top plug has been screwed back onto the capsule in the loading structure first location, the capsule is transferred to the second location for filling with inert gas, the bottom plug of the capsule is inserted into the corresponding housing of the bottom nozzle, so that the projecting peg lifts the valve of the bottom plug into an open position, and an inert gas under pressure is delivered into the inlet end portion of the channel in the top plug, so as to open the valve of the top plug and then fill the inside space of the capsule with inert gas, the water and the gas contained in the capsule being expelled through the channel in the bottom plug, the delivery of inert gas being stopped after the inside space of the capsule has been filled, so that the closure valve of the top plug recloses, with the leaky fuel rod then being stored inside the capsule in an atmosphere of inert gas under pressure.

Claim 26 (new): The method according to claim 24, further comprising placing the loading structure or the capsules in the support structure.

Claim 27 (new): The method according to claim 23, wherein the support structure comprises a warehousing arrangement containing at least one case having substantially a shape and dimensions of the fuel assembly for receiving a plurality of capsules and closable by sealed covers.

Claim 28 (new): The method according to claim 27, wherein a sealed barrier is constituted around each of the defective rods by at least one of the capsules containing the rod and the at least one case containing the capsule.

Claim 29 (new): The method according to claim 27, wherein the warehousing arrangement is capable of receiving the loading structure in place of the case.

Claim 30 (new): The method according to claim 23, wherein the leaky fuel rods coming from the at least one fuel assembly are placed in an intermediate storage arrangement before the inserting step.

Claim 31 (new): The method according to claim 23, wherein the support structure has the shape and the dimensions of the fuel assembly.

Claim 32 (new): A method of packaging leaky fuel rods for at least one of transport and subsequent storage of at least 50 years, each leaky fuel rod containing pellets of fuel material in tubular cladding and being closed at ends of the tubular cladding and presenting a sealing defect, each leaky fuel rod coming from at least one fuel assembly and being deposited in a first step underwater in a pool, the method comprising:

making available a plurality of capsules, each of the plurality of capsules for receiving one of the leaky fuel rods, and each of the plurality of capsules including a tubular sheath and two end plugs, at least one of the two end plugs being removable, each of the plurality of capsules having a longitudinal axis;

placing a loading structure in the pool, the loading structure being capable of receiving the plurality of capsules so that the longitudinal axes of the plurality of capsules are in a vertical orientation, the loading structure having an open top end;

securing, on the open top end, a device for loading one of the leaky fuel rods into the at least one capsule, the device for loading having an opening and a guide device capable of being placed at the opening;

inserting the leaky fuel rods in the pool one by one into empty ones of the plurality of capsules in the loading structure, the inserting for each leaky fuel rod including: unscrewing one of the end plugs of a respective capsule of the plurality of capsules, the end plug being situated at a capsule top end; placing the leaky fuel rod into the respective capsule via the guide device; and screwing the one end plug at the top end of the capsule back into place; and

placing each capsule containing the leaky fuel rod in a location of the loading structure; and

transporting and storing the leaky fuel rods inside the capsules placed in the loading structure.

Claims 33 (new): A method of packaging leaky fuel rods for at least one of transport and subsequent storage of at least 50 years, comprising:

depositing the leaky fuel rods in a pool;

making available a plurality of capsules, each of the plurality of capsules for receiving one of the leaky fuel rods, and each of the plurality of capsules including a tubular sheath and two end plugs, at least one of the two end plugs being removable, each of the plurality of capsules having a longitudinal axis;

placing a loading structure in the pool, the loading structure being capable of receiving the plurality of capsules so that the longitudinal axes of the plurality of capsules are in a vertical orientation, the loading structure having an open top end;

securing, on the open top end, a device for loading one of the leaky fuel rods into the at least one capsule, the device for loading having an opening and a guide device capable of being placed at the opening;

inserting the leaky fuel rods in the pool one by one into empty ones of the plurality of capsules in the loading structure at a loading location, the inserting for each leaky fuel rod including: unscrewing one of the end plugs of a respective capsule of the plurality of capsules,

the end plug being situated at a capsule top end; placing the leaky fuel rod into the respective capsule via the guide device; and screwing the one end plug at the top end of the capsule back into place; and

moving each capsule containing the leaky fuel rod from the loading location to a different storage location; and

transporting and storing the leaky fuel rods inside the capsules while in the storage location.